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**Hillenbrand**

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[54] **UNMANNED UNDERSEA WEAPON  
DEPLOYMENT STRUCTURE WITH  
CYLINDRICAL PAYLOAD CONFIGURATION**

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[58] **Field of Search** ..... 114/21.2, 312, 114/316, 317, 318; 89/1.809, 1.81; 244/3.12; 342/54, 357

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

3,499,364	3/1970	D'Ooge	89/1.81
4,455,917	6/1984	Shook	89/1.817
5,076,192	12/1991	Tegel et al.	114/316
5,163,379	11/1992	Chorley	114/317
5,267,220	11/1993	Burt	367/131
5,448,941	9/1995	Godfrey et al.	89/1.809

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[57] **ABSTRACT**

An unmanned undersea vehicle system includes an axis-symmetrical cylindrically-shaped self-propelled undersea deployment vehicle of predetermined diameter having an amidships undersea weapon bay. The amidships undersea weapon bay includes a number of weapon deployment devices symmetrically disposed about a central core, each weapon deployment device having a weapon canister for carrying a weapon. The weapon deployment devices are pivotable between a retracted, non-deployed position and an extended, deployed position, and have a surface which, when the weapon deployment devices are in their retracted, non-deployed positions, conforms to the vehicle's cylindrical shape, and when in their extended, deployed positions place the weapon canisters beyond the vehicle's diameter. Each weapon canister has a sidewall conforming to the shape of the weapon contained therein, and end caps at opposing ends. The end caps are discharged when the weapon contained therein is fired, which allows the weapon to have a clear trajectory and also seawater to enter the canister. A control element controls pivoting of the weapon deployment devices from their retracted, non-deployed positions and their extended, deployed positions to facilitate firing of at least one weapon, and further controls pivoting of the weapon deployment devices from their extended, deployed positions to their retracted, non-deployed positions after firing. The weapon canisters whose weapons have been fired retain seawater so as to provide for a generally axis-symmetrical distribution of mass as among those weapon deployment devices whose weapons have been fired and those weapon deployment devices whose weapons have not been fired.

**4 Claims, 9 Drawing Sheets**

